

5 What is claimed is:

1. A foot orthotic for supporting the arch of a foot, the orthotic comprising:
  - a bottom surface including a mid-plantar region having a perimeter that includes a front portion, a rear portion opposite the front portion, a left side portion and a right side portion opposite the left side portion;
  - 10 a plurality of longitudinal ribs in the mid-plantar region, each extending toward the front and rear portions of the perimeter but not across the mid-plantar region; and
  - a plurality of lateral ribs in the mid-plantar region, each extending from a  
15 respective longitudinal rib toward one of the side portions of the perimeter and forming an angle with the respective longitudinal rib that is greater than 90°, wherein the angular relationship between the longitudinal and lateral ribs is operable to reduce the concentration of stress generated in the intersection of the longitudinal ribs with the lateral ribs when the mid-plantar region is flexed.
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2. The foot orthotic of claim 1 wherein each longitudinal rib extends linearly toward the front and rear portion of the mid-plantar region's perimeter.
3. The foot orthotic of claim 1 wherein each lateral rib extends linearly from a respective longitudinal rib.
- 25 4. The foot orthotic of claim 1 wherein:
  - each longitudinal rib extends linearly toward the front and rear portion of the mid-plantar region's perimeter, and
  - each lateral rib extends linearly from a respective longitudinal rib.
5. The foot orthotic of claim 1 wherein each longitudinal and lateral rib have a  
30 substantially rectilinear cross-section.

- 5     6.     The foot orthotic of claim 1 wherein each longitudinal and lateral rib have a substantially trapezial cross-section.
7.     The foot orthotic of claim 1 wherein the plurality of longitudinal and lateral ribs form a plurality of cavities in the mid-plantar region.
8.     The foot orthotic of claim 7 wherein:
- 10         each longitudinal and lateral rib has substantially the same length, and the plurality of cavities includes a cavity having a substantially hexagonal shape.
9.     The foot orthotic of claim 1 further comprising a top surface having an arch region opposite the mid-plantar region of the bottom surface, wherein the arch
- 15         region is contoured to distribute pressure exerted on the arch region by a person's arch to the mid-plantar region.
10.    The foot orthotic of claim 9 wherein the plurality of longitudinal and lateral ribs form a plurality of cavities in the mid-plantar region and each cavity includes a hole operable to allow air to pass from the cavity toward the top surface.
- 20    11.    A foot orthotic for supporting the arch of a foot, the orthotic comprising:
- a bottom surface including a mid-plantar region having a perimeter that includes a front portion, a rear portion opposite the front portion, a left side portion and a right side portion opposite the left side portion;
- a plurality of curved longitudinal ribs in the mid-plantar region, each extending
- 25         toward the front and rear portions of the perimeter but not across the mid-plantar region; and
- a plurality of curved lateral ribs in the mid-plantar region, each extending from a respective longitudinal rib toward one of the side portions of the perimeter, wherein the curvature of the longitudinal and lateral ribs is
- 30         operable to reduce the concentration of stress generated in the longitudinal and lateral ribs when the mid-plantar region is flexed.

- 5 12. The foot orthotic of claim 11 wherein each longitudinal and lateral rib have a substantially rectilinear cross-section.
13. The foot orthotic of claim 11 wherein each longitudinal and lateral rib have a substantially trapezial cross-section.
- 10 14. The foot orthotic of claim 11 wherein the plurality of longitudinal and lateral ribs form a plurality of cavities in the mid-plantar region.
15. The foot orthotic of claim 14 wherein the plurality of cavities includes a cavity having a circular shape.
16. The foot orthotic of claim 14 wherein the plurality of cavities includes:  
two cavities each having a circular shape with a diameter in the range of 10 to  
15 15 millimeters, and  
two cavities each having a circular shape with a diameter in the range of 15 to  
20 millimeters.
17. The foot orthotic of claim 11 further comprising a top surface having an arch  
region opposite the mid-plantar region of the bottom surface, wherein the arch  
20 region is contoured to distribute pressure exerted on the arch region by a person's arch to the mid-plantar region.
18. The foot orthotic of claim 17 wherein the plurality of longitudinal and lateral ribs form a plurality of cavities in the mid-plantar region and each cavity includes a hole operable to allow air to pass from the cavity toward the top surface.
- 25 19. A method for supporting a foot while walking, running or standing, the method comprising:  
forming a plurality of longitudinal ribs in a mid-plantar region of a foot orthotic;  
extending each longitudinal rib toward a front portion and rear portion of a  
perimeter of the mid-plantar region but not across the mid-plantar region;  
30 forming a plurality of lateral ribs in the mid-plantar region of a foot orthotic;

- 5 extending each lateral rib from a respective longitudinal rib toward one of a  
right side portion and a left side portion of the perimeter of the mid-plantar  
region to form an angle that is greater than 90°; and  
distributing force generated in the mid-plantar region of the foot orthotic  
among the plurality of longitudinal and lateral ribs.
- 10 20. A method for supporting a foot while walking, running or standing, the method  
comprising:  
forming a plurality of curved longitudinal ribs in the mid-plantar region of a foot  
orthotic;  
15 extending each longitudinal rib toward a front portion and rear portion of a  
perimeter of the mid-plantar region but not across the mid-plantar region;  
forming a plurality of curved lateral ribs in the mid-plantar region of a foot  
orthotic;  
extending each curved lateral rib from a respective curved longitudinal rib  
toward one of a right side portion and a left side portion of the perimeter of  
20 the mid-plantar region; and  
distributing force generated in the mid-plantar region of the foot orthotic  
among the plurality of longitudinal and lateral ribs.